Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-3.   (Cancelled)

4.   (Original) A method for detecting bearing anomalies in machinery, which comprises performing at each of a plurality of times the steps of:

constructing a condition signature from a plurality of condition indicators including (a) a plurality of vibration measurements acquired from the machinery or (b) one or more vibration measurements and one or more performance parameter measurements acquired from the machinery;

predicting a normal signature corresponding to the condition signature for the machinery without bearing anomalies;

comparing the condition signature with the normal signature; and

registering a bearing anomaly if the condition signature differs from the normal signature by more than a predetermined threshold.

5.   (Original) A method according to claim 4, wherein the normal signature is predicted from a model defining one or more inter-dependencies between the condition indicators.

6.   (Original) A method according to claim 5, wherein the model is a learnt model.

7.   (Previously Presented) A method according to claim 5, wherein the model comprises a matrix with one or more non-zero off-diagonal terms to define said inter-dependencies.

8.   (Previously Presented) A method according to claim 7, wherein the step of comparing the condition signature with the normal signature involves calculating a value for the normalized innovations squared.

9.   (Previously Presented) A method according to claim 5, wherein the model comprises a neural network.

10.   (Original) A method according to claim 9, wherein the step of comparing the condition signature with the normal signature involves calculating a prediction error.

11.   (Previously Presented) A method according to claim 4, wherein said times define successive intervals of at most 1 sec duration.

12.   (Currently Amended) A method according to ~~claim 1,~~ claim 4, wherein the machinery comprises a gas turbine engine.

13.   (Cancelled)

14.   (Original) A data processing system for detecting bearing anomalies in machinery, comprising:

data acquisition devices for acquiring a plurality of condition indicators from the machinery at each of a plurality of times, the condition indicators including (a) a plurality of vibration measurements or (b) one or more vibration measurements and one or more performance parameter measurements;

a processor for constructing a condition signature from said vibration measurements and for predicting a normal signature corresponding to the condition signature for the machinery without bearing anomalies;

a comparator for comparing the condition signature with the normal signature; and

a register for registering a bearing anomaly if the comparator indicates that the condition signature differs from the normal signature by more than a predetermined threshold.